Historic, archived document

Do not assume content reflects current scientific knowledge, policies, or practices.

RECD
LIBRARY
JAN 1 1940
BUREAU
OF
PLANT INDUSTRY

WEEKLY STATION REPORTS

OF THE DIVISION OF

DRY LAND AGRICULTURE

BUREAU OF PLANT INDUSTRY

U. S. DEPARTMENT OF AGRICULTURE

••• 46148

DEC 1939

Not for publication without
prior consent of this division.

REPORT FOR THE MONTH OF DECEMBER 1939

HAVRE:

The month was characterized by unseasonably warm weather during the first three weeks. During the last week temperatures dropped for several days, hitting a low of -21° on the 27th. The monthly mean of 30° was 12° above normal. This was the warmest December in the history of the station. All precipitation was received during the latter part of the month, beginning with rain and turning into snow; roads in many places were very icy. The total precipitation for the year was 10.83 inches, which is 1.15 inches less than the 22-year station average (1917-38). Snowfall for the month was about 2 inches below normal.

Winter cereals and crested wheatgrass seedings which have been bare all fall should benefit by the even blanket of wet snow which fell.

Winter feeding trials were started on the 7th; calves, yearlings, and two-year-olds being included in these experiments. Because of the rather poor quality of the 1939 hay the heifer calves were slow in going on feed, however with the advent of cold weather they appear to be improving. Chopped hay is being fed to the two-year-old heifers. The cow herd was grazed on native grass during the entire month; the first hay being fed during the cold snap beginning on the 22nd.

Visitors included Torlief Aasheim of the Soil Conservation Service and Earl G. Davis of the U. S. Entomological Laboratory.

Maximum temperature, 69°; minimum, -21°; precipitation, 0.57 inch; snowfall, 8.1 inches.

JUDITH BASIN:

Steers in the winter pasture and feeding experiment were weighed on December 20th. The feed lot groups which are being fed crested wheatgrass hay and supplements showed better gains than the groups on mature crested wheatgrass pasture and the same supplements.

Weather during the month of December was exceptionally mild and very favorable for livestock. This December with a mean of 34° proved to be the warmest at this station during the past 31 years. Seven days during the month the maximum was 60° or more, and on only four days the minimum was below zero. With the exception of the week ending December 27, the month was much like spring.

Precipitation totaled only 0.34 inch compared to the station average of 0.69 inch. The total precipitation for 1939 was 12.00 inches, which is 2.94 inches below the 20-year average.

On eight days during the month the average wind velocity was 10.0 miles per hour or more, and on eight days the average was less than 5.0 miles per hour, the latter, is worth mentioning for Central Montana.

Mr. William Jones, Division Agronomist of the Soil Conservation Service from Billings, was a station visitor.

Maximum temperature, 67°; minimum, -8°; precipitation, 0.34 inch.

HUNTLEY:

Climatic conditions during the first half of December closely resembled those experienced during November. Temperatures were moderate and no precipitation was received. A period of cloudy skies and light precipitation in the form of showers and snow flurries began about the 20th and extended to the 26th. Temperatures fell slowly during the storm interval until a low of 14° below zero was recorded on the morning of the 26th. Sub-zero minima occurred on the 27th and 28th also. A light snow and shower were received at the end of the month, but temperatures were rising slowly at the close of the period.

Field work was possible during a large part of the month, with farmers plowing, disking, threshing corn, and hauling manure in the vicinity of the station. The principal field work on the station consisted of hauling manure and threshing corn. Dry Land corn yields of both grain and stover were much better then anticipated, in view of the fact that the crop was produced in a growing season, the last 2 months of which were very dry. The average yield of corn was 5.6 bushels above the 26-year mean, and all plots except 2 exceeded their previous average return. Stover yields were also generally above the mean.

Maximum temperature, 76°; minimum, -14°.

Precipitation, 0.21 inch, and for the year, 12.16 inches, or 1.20 inches below the 30-year mean. Below-average precipitation was received every month except May and June, but in those 2 months a total of 7.73 inches was received, or 181 percent of the average.

SHERIDAN:

Warm, dry weather similar to that of November continued over the first 20 days of the month. Temperatures over the last 10 days were more nearly normal for the season, with several light flurries of snow, making a total of 0.3 inch of precipitation for the month. Below zero temperatures, none of them extreme, were recorded only on 3 days from the 26th to the 28th.

The mean temperature for the month was about 11° above the average, the highest yet recorded here for December. Precipitation was 0.21 inch below the average.

Condition of fall sown grain is doubtful, excepting on fallow, but appeared to be fair about the middle of the month. There was about a 2 inch cover of snow during the coldest weather, and the month ended with about an inch of snow on the ground.

Maximum temperature, 78°; minimum, -7°; precipitation, 0.30 inch.

DICKINSON:

The past December was the warmest during the station history and probably the mildest December since State wide records are available. The mean temperature of 26° was 10° above normal. Unusually mild weather continued until the 23rd, after which there were four mornings with below zero temperatures, with a minimum of -11°. On the morning of January 1, 1940 the temperature dropped to -20°.

Precipitation of 0.21 inch was less than half of normal for the month. The ground was bare of snow throughout November and until

the 21st of December. About 2 inches of snow covered the ground at the end of the month. Precipitation for the four months, September - December, was only 0.79 inch, the lowest of record in 48 years. Total precipitation of 15.75 inches in 1939 was a little more than half an inch above normal.

High small grain yields in 1939 were the result of above normal and well distributed precipitation in May, June, and early July. The average yield of 29 bushels of wheat and of 41.9 bushels of barley were the best yields harvested on the main field rotations since 1922. An average of 65 bushels of oats was the best yield since 1928. Corn yields were only about average for the rotations, corn having been adversely affected by cool weather the fore part of the season and by heat and drought in July and August, but these yields were the best harvested since 1932. Fair yields of hay and roughage, together with a good native grass crop combined with a good price of livestock caused some increase in herds and flocks on farms and ranches. The district is still understocked as a result of extreme drought in 1936.

Visitors included Carl Peterson, Bureau of Agricultural Economics, and C. L. Englehorn, Soil Conservation Service.

MANDAN:

Arboriculture: During 1939 trees in farm plantings and those under test on the Mandan station gave fairly satisfactory results. Deciduous species in farm plantings varied from a minimum survival of 57 per-cent to a maximum of 71 per-cent in plantings 20 years of age; from 10 per-cent to 83 per-cent in plantings 15 years of age; from 14 to 74 per-cent in plantings 10 years of age; and from 6 to 62 per-cent in plantings 5 years of age. Northwest poplar and Tatarian maple occur in 15- and 10-year plantings and have by far the lowest survivals. Other species are up near the maximum survivals, except in 5-year plantings where all but green ash are low. Trees in this latter age class have had decidedly unfavorable years from the time of planting up to the present. High mortality and very little growth has been the result. Killing back has been prevalent in all species and all ages. Average growth in 1939 was in several cases much lower than the average recorded for the same plantings five years previously.

Approximately 75 per-cent of the 20-, 15-, and 10-year plantings are serving a very useful purpose in reducing wind velocity and preventing snow from drifting around the farm buildings and home. Only about 30 per-cent of the 5-year plantings in their present condition give any indication of being beneficial from a protective standpoint. Replanting of these would be highly desirable if moisture conditions become favorable at a future date.

Coniferous species planted during various years from 1921 to the present show extremely high mortality except for those planted in 1927 - a year of low evaporation and fairly favorable moisture conditions. There is good reason to believe that coniferous species receiving favorable climatic conditions the first year and thus becoming well established will survive more severe drought conditions in later years than those trees which may have shown fairly satisfactory establishment in the less favorable years, but never developed into a healthy vigorous growing condition. The majority of coniferous plantings fall into this latter class, and during the last few years most of them have succumbed to the unfavorable conditions.

Survivals of deciduous species planted in 1939 varied from a low of 72 per-cent to a high of 90 per-cent, with an average of 82 per-cent, and coniferous species from 34 per-cent to 51 per-cent with an average of 38 per-cent. The extremely dry fall will doubtless result in more losses during the winter months, particularly in coniferous species.

Temperatures during December were much above normal. The mean for the month was 26° F., the highest recorded in 25 years of station record. The first below zero temperature was on the morning of the 28th.

Precipitation for the month was 0.31 inch. The total for the year was 13.95 inches, compared with the 25-year average of 15.18 inches.

Snowfall for the month was 3.7 inches. The first fall was on the 18th.

One day of high wind and dust blowing occurred early in the month.

Maximum temperature, 66°; minimum, -12°; precipitation, 0.31 inch.

ARCHER:

The weather during the first three weeks of December was mild and dry. The remainder of the month was cold and stormy. The precipitation in December totaled 0.24 inch; the total during the year was 8.12 inches, and the seasonal 5.82 inches.

Winter cereals at the station are in about the same condition as reported November 30. Winter rye is in good shape. Just a few green leaves of winter wheat appear on the best methods of fallow plots. The recent wet snows moistened the dry prairie grasses and will be of aid in preventing them from breaking off and blowing away.

Most of the livestock in this section are thin but as yet appear thrifty.

Director W. L. Quayle of the University of Wyoming and S. M. Henserson, Superintendent of the C.C.C. Camp located at Sterling, Colo., accompanied by a group of technicians visited the station during the month.

Maximum temperature, 70°; minimum, -8°; precipitation, 0.24 inch.

NORTH PLATTE:

The fall and early winter drought was broken by an eight inch snow which began falling the 23rd. There has been very little wind to cause drifting. There have been enough warm days since the snow to settle it, but to date, very little has melted. The snow was equal to 0.64 inch of moisture which is 0.11 inch above the normal for this month. Temperatures for the first half of the month were above normal. On the 10th, a reading of 77° was recorded which is the highest recorded in the 65 years of Weather Bureau history. Temperatures the last week of the month fell below the zero mark, and on very few days did the maximum temperature reach freezing. High winds on three days of the first three weeks caused considerable soil blowing from unprotected areas.

The total precipitation for the year recorded at the table station was 12.77 inches or 5.81 inches below normal. Lower precipitations were recorded during 1910 and 1931. The mean temperature for the year was 4.4° above normal.

The recent snow will be of benefit to pastures and winter wheat. Most of the wheat seeded on cropped land suffered because of the high temperatures and the dry condition of the soil, and stands next spring will be very thin at the best. The wheat on fallow has had enough moisture to survive, and if there is a normal amount of precipitation next spring, a good crop can be expected.

Maximum temperature, 77°; minimum, -6°; precipitation, 0.64 inch.

AKRON:

The month remained open and relatively warm to the 23rd when about 4 inches of snow fell evenly. Two days later a chinook wind drifted a slight portion, then melted and settled the remainder. This was then followed by the coldest weather of the month and of the present winter. Blustery weather with intermittent light snow characterized the last seven days of the month.

Messrs. Ivan Watson and Chas. Giles came out early in the month to give the fattening pigs their regular weighing. Ed Finkner, the owner has also given the pigs close attention during the fattening period. Numerous farmers have also called especially to observe the sorghum fed lot.

The 1939 precipitation totalled 9.93 inches; seasonal, 6.83 inches.

Maximum temperature, 75°; minimum, -6°; precipitation 0.40 inch.

COLBY:

December was a warm and pleasant month. The first three weeks were unusually warm and dry. A period of cold and snowy weather set in on the 23rd and continued to the end of the month. During this period 14 inches of snow fell, netting 1.02 inches of moisture, the heaviest precipitation in December since 1924. The snow drifted some on the 23rd, but comparatively calm weather prevailed after that so that the snow which fell lay on the ground very evenly. Thawing weather prevailed the last two days, and as the ground was not frozen under the snow, the moisture soaked in without any run-off. About 5 inches of snow covered the ground at the end of the month.

The mean temperature was 7° above the normal, making this December the warmest on record. A temperature of 79° on the 6th was the highest temperature ever recorded at this station for December. The minimum never approached zero, except on the 27th, 28th and 29th, when it went down to -8°, -8°, and -6°, respectively.

There were only three days when the wind blew so that it was dusty. On these days, the 1st, 12th, and 18th, there was some soil blowing. Most of the time the weather was calm with occasional moderate winds.

Precipitation, 1.02 inches in the form of 14 inches of snow. Precipitation, 52-year average, 0.52 inch.

Precipitation, 1939, 13.64; 52-year average, 17.36.

HAYS:

The fall drought which has been continuous since the middle of August except for 0.42 inch in September, 0.18 in October, and 0.11 in November continued through December to the 23rd at which time a 3-inch snow occurred. A good portion of this snow blew off the fields. It was followed December 26 and 27 by 4 inches of snow, most of which lay on the fields. The 7 inches of snow amounts to about 0.70 inch of water.

Inasmuch as a portion of the snow blew off the fields and the remainder of it is melting very slowly resulting in considerable loss by evaporation, it is doubtful if this water will wet the soil deep enough to reach all the seed now laying in dry soil. However, it should be beneficial to the small percentage of wheat that is up.

Except for 3 part cloudy and 3 dusty days the weather was quiet and clear up to the 23rd. Since then it has been cloudy or part cloudy most of the time.

Beginning with the 22nd minimum temperatures have ranged between 8° below zero and 24° above.

The creek was first covered with thin ice on the 22nd. The ice has been thick enough for skating the past week.

At the close of the month the ground is generally covered with a light layer of snow. However, there are bare patches in most every field.

Maximum temperature, 83°; minimum, -8°; precipitation, 0.70 inch.

GARDEN CITY:

This area received a much needed Christmas present this year, as snow commenced falling the 22nd and continued into the 23rd, bringing 0.55 inch of moisture. Some of this was lost from the fields by blowing, but most of it remained. On Christmas day it began snowing again and continued into the 26th, bringing 0.31 inch. All this snow remained in place. This makes a total of 0.86 inch for December while the average is 0.45 inch, and it is the most moisture received in December since 1918.

Temperatures were high on the average. Three consecutive nights commencing with the 26th were below zero, and the temperatures for those nights were -5°, -8°, and -3°.

Wind velocities were slightly below average and only four dusty days occurred, none of which were severe. For the entire year of 1939 there were 80 days during which dust was in the air. Sixty-three of these were termed "dusty", fifteen "bad", and two "very bad". Last year there were 93 days during which dust was in the air. Eighty-one of these were termed "dusty", twelve "bad", and none "very bad".

Late fall tillage work was done the first part of December. Chiseling was attempted on some of the plots which were subject to blowing, but this was abandoned as the soil was too dry and loose. As soon as the snow is melted the plots will be worked to aid in controling soil blowing.

Maximum temperature for December, 78°; minimum, -8°; precipitation, 0.86 inch. 1939 precipitation, 9.79 inches. Average for period 1908 - 38, 17.30 inches.

Station visitors were Dr. C. J. Whitfield, S.C.S. Amarillo, Texas, L. T. Moberly, S.C.S. Liberal, Kansas. Hugh Porterfield, S.C.S. Dalhart, Texas, Verile Oline, F.S.A., Dodge City, Kansas, and J. M. French, County Agent, Lamar, Colo.

TUCUMCARI:

The month was one of extremes in temperature and precipitation. Mean temperature for the first 20 days was 49.8°; for the last 11 days 23.0°. Mean of 40.4° for the month was some 3° above normal. The maximum reading was 81°, the minimum, -3°.

Precipitation totaling 0.96 inch fell in the form of snow during the period 22-27, the highest December precipitation since 1926. Snow covered the ground to a depth of about 8 inches for a week. Total precipitation for 1939 was 12.50 inches, nearly 4 inches below the 34-year normal. Average annual precipitation during the past six years, 1934-39, was 12.20 inches.

Livestock is in good condition. The recent moisture may prove of untold benefit to some of the wheat in this area. Where seed germinated and survived the drought of the past months prospects now seem promising. However, some seedlings died and in many fields germination did not take place. Where but little growth was made and the ground is virtually bare it is obvious that warm, growing weather is essential if soil movement is to be avoided when late winter winds occur. Should blowing start, however, there is sufficient moisture in the soil to permit effective cultural work.

On a recent trip to and from Chicago it was observed that the northern part of the Texas panhandle, the Oklahoma panhandle, and the western two-thirds of Kansas, along the C.R.I. and P. right of way, had no green wheat. Many fields had been prepared but not seeded; others showed drill marks, but not a green tint could be seen from the train. Before the recent snow it appeared the entire wheat acreage was in perfect blow condition. It seems safe to assume that a great amount of late winter blow-prevention cultivation will be necessary.

DALHART:

The mean temperature of 37° for the month was 4° above the normal. The maximum temperature of 80° was the highest so far recorded for December. The first 20 days of the month were excessively mild and pleasant, but the latter part was much colder. It was during this latter period that a series of snows, totaling 11.1 inches, fell and remained on the level. The snow blanket is about half melted at the end of the month. The total precipitation received was 1.11 inches. This was one of the best snows, no drifting, which has been received in a number of years.

All outside field work was completed early in the month. All recleaning and inside plot threshing was completed by the end of the month. Grain sorghum yields on the station were 10 to 20% below average. In the surrounding territory yields were from no grain and no forage to a fair grain yield or a good bundle (forage) yield. All available moisture was removed from the soil by the crop this year. When the fall-plowed plots were plowed an extremely difficult task was encountered. Then when the subsoiling was done it was really learned how dry and hard the soil had become. The

snow received the latter part of the month is apparently entering easily this dry, unfrozen ground, as it melts.

The total precipitation for the year was 14.44 inches; the 32-year average is 17.41 inches; the average for the past 7 years is 12.31 inches. The precipitation for the crop year, Oct. 1, 1938, to Sept. 30, 1939, was 15.69 inches.

Maximum temperature, 80°; minimum, -7°; precipitation, 1.11 inches.

BIG SPRING:

Weather conditions were very favorable for field work during the first three weeks of the month. Clear, fair, and for the most part, warm, weather prevailed during this time. Temperatures started dropping on the 24th and continued through the 29th when a minimum of 12° was recorded. Snow started falling on the 24th and continued intermittently throughout Christmas day. This snow measured 5 inches on the level, which is the most that has fallen at any one time here in several years. Precipitation recorded from this was 0.59 inch. This brought the total precipitation for the year up to 15.45 inches, as compared with a normal of 19.01 inches. The normal growing season precipitation is 13.06 inches, whereas only 9.87 inches was received in this period during the past year. However, distribution was such that crop yields in general were normal or above. This condition did not apply to the county as a whole or to this area. The rainfall throughout the year was so spotted that some sections reported near crop failures, while other sections only a few miles away obtained excellent yields.

Although moisture in the subsoil is very limited at present, the rains received during the later part of November plus the recent snow has added enough to the first foot of soil to allow a good job of listing and plowing to be done.

Work during the past month has consisted of cleaning up cotton picking, threshing, and stacking feed. All fall plowing and listing of the plots as well as increase fields was completed during the month. Other work consisted of ginning cotton from all rotations and varieties for linting percentages.

Maximum temperature, 83°; minimum, 12°; precipitation 0.66 inch.

WOODWARD:

Precipitation in December amounting to 0.83 inch occurred mostly in the form of snow of which 6.5 inches was recorded. Rainfall in 1939 totalled 20.24 inches as compared with a 26-year station average of 22.99 inches. The recent snowfall, remaining on the ground since the 23rd, has helped to alleviate, temporarily at least, the severe drought which has persisted since July. December temperatures were far above normal during the first two weeks, a maximum of 83° on the 6th being exceeded only once in local Weather Bureau history. Temperatures were much lower during the last ten days, however, the monthly mean was 4° above normal.

Late fall plowing in the crop rotation and tillage method project was completed under conditions too dry for satisfactory work. Winter wheat plots, many of which had partial stands at the beginning of the month, showed little or no improvement although recent precipitation should be beneficial. Some farmers are now anticipating the seeding of winter wheat as soon as surface conditions permit.

Miscellaneous field work has involved cutting stalks in the cereal project, clearing brush and stumps in Spring Creek above the reservoir, and building fences. Cleaning seed grain and other seed house activities have been in progress. A take-off gate valve for the new pipe line was installed at the pump plant reservoir.

A number of trees have been transplanted in the vicinity of the dam and at other locations. Older trees on the campus and along the town drive were pruned. Transplanting, propagating, and potting various greenhouse material and stratification of forestry and shrub seed contributed to general activities. Rabbits have been quite troublesome in the nursery area, various poison baits proving rather ineffective, but spot light shooting resulted in some good kills.

Visitors included I. C. Coryell, Land Acquisition Section, S.C.S; H. A. Daniel, Research Division, S.C.S.; Dr. H. J. Harper, Oklahoma Experiment Station; and J. S. Lignon, Bureau of Biological Survey.

Maximum temperature, 83°; minimum, 7°; precipitation, 0.83 inch; snowfall, 6.5 inches.

PENDLETON:

Good rains and favorable weather throughout the Columbia Basin in December materially improved crop prospects for next year. Much of the late sown wheat emerged during the latter part of the month. Moisture conditions on unseeded lands are ideal. On the station all the wheat sown on fallow land is up with excellent stands, on fall plowing or disking the wheat is beginning to emerge. Fall sown grasses are also beginning to emerge. Grasses on the ranges are beginning to green up nicely, although no feed is available from them.

Precipitation during December was 3.01 inches, this was 1.12 inches more than the 10-year average. A measurable amount of precipitation occurred on 18 days during the month with 0.47 the most in any 24-hour period. Traces of snow occurred on two days. Precipitation for the calendar year 1939 was 11.76 inches, the 10-year average is 15.75 inches. Precipitation from September 1 to December 31 was 4.23 inches, the 10-year average is 5.03 inches.

The writer attended the 12th annual meeting of the Eastern Oregon Wheat League at Condon, Oregon. About 600 wheat farmers were in attendance, with 14 states represented. Benson County, N. D. was awarded the prize offered by the Wheat League for the highest percentage compliance with the AAA program. The prize was a large glass bowl on an Oregon myrtle wood base and filled with hand picked Rex wheat from this station. The prize for the farmer coming the greatest distance was awarded to a farmer from Miami, Texas, next greatest distance was from Indiana.

Maximum temperature, 72°, minimum, 22°.

BELLE FOURCHE:

The first half of December was exceptionally warm. The daily maximum temperatures during this period ranged from 41° to 74°, and exceeded the previous record high for December, 66°, on four different dates. Colder weather accompanied a light rain and snow on December 17, and temperatures during the remainder of the month were about normal.

Precipitation was limited to a few light snows which were not heavy enough to afford much protection or be of any benefit to crops. No precipitation was received from November 9 to December 16, and only a trace of snow remained on the ground at the end of December. The total precipitation for the year was 10.06 inches, which is 5.64 inches less than the 32-year average.

Strong winds occurred rather frequently during the daytime, but the total wind movement in December was below normal. High winds on December 1, 11, and 12 caused severe soil blowing on smooth fields, and reduced some medium rough fields to a dangerous blow condition. Some blowing took place on grain stubble fields, as much of the small grain was unable to make sufficient growth in 1939 to afford a great deal of protection.

The unseasonably warm weather during the first half of the month caused the buds of cottonwood, chinese elm, and other trees and shrubs to swell, and some of the buds were on the verge of opening. Native wild flowers in the more favored, protected locations commenced blooming, and various other forms of vegetation showed signs of growth activity. Considerable winter injury is anticipated, but trees and shrubs were favored somewhat by a week of moderately cold weather in which to become hardened before subzero temperatures occurred. Owing to the continued lack of moisture, there was further deterioration in the condition of winter grain.

Maximum temperature, 74°; minimum, -2°; precipitation, 0.17 inch.

LAWTON:

The December precipitation of 0.59 inch provided only temporary relief from the drought that has extended throughout the fall and winter to date. Rain and snow combined, on December 25, provided 0.26 inch of the monthly precipitation.

The total precipitation of 17.23 inches for the year was deficient 13.08 inches. Since 1871 there have been only three years when the annual precipitation was lower. During this period, 1871-1939 inclusive, there were 8 years when the annual precipitation ranged from 15.07 to 19.73 inches.

The spring drought of 1939 resulted in near failures of small grains. Slight relief in June provided sufficient moisture to plant cotton and sorghums. Both crops were subjected to high summer temperatures and continued moisture deficiency. In general, the production of sorghums was negligible, and cotton production was near the bottom.

The present condition and prospects of small grain crops in 1940 are hazardous. Well distributed supplies of moisture are required to make even a fair crop.

During the first half of December the mean temperature was 12.8° above normal. By the end of the month the mean monthly temperature was only 6.2° above normal.